UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,664	10/14/2003	Emil A. Kneer	LAM2P315A	5635

25920 7590 01/25/2006

MARTINE PENILLA & GENCARELLA, LLP
710 LAKEWAY DRIVE
SUITE 200
SUNNYVALE, CA 94085

EXAMINER	
MACARTHUR, SYLVIA	

ART UNIT	PAPER NUMBER
1763	

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/685,664	KNEER, EMIL A.	
	Examiner	Art Unit	
	Sylvia R. MacArthur	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1 and 3-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 6,652,708. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the present invention are broader. Specifically, the present invention claims a broad polishing surface while the patent claims a linear belt with rollers. The narrow claims of the

patent anticipate the broad claims of the present invention. Furthermore, the present invention encompasses the claims of the patent.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 3-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiou et al (US 5,873,769) in view of Carpenter et al (US 6,763,686).

Regarding claims 1 and 6-8: Chiou et al teaches a CMP system with a processing surface temperature controller comprising an array of thermal elements (circular heating elements 60), col. 6 lines 22-52 teaches that these elements are independently controlled, The thermal elements are placed in a platen (processing surface) and are positioned to contact a back surface of the processing surface.

Chiou fails to teach that each of the elements is connected to a controller that is configured to manage a surface temperature of the process surface.

Carpenter et al teaches a method and apparatus of processing a continuous substrate. An array of thermal elements is provided coolers 130 and heater 102. The array of thermal elements (units) are positioned to contact a back surface of the processing surface.

The heater contains an array of heaters 112 which are controlled by a system controller 114. The motivation to modify the apparatus of Chiou to use the thermal elements of Carpenter et al that providing a system controller to control each of the thermal elements

will enhance process control of the CMP system by better managing the temperature of the processing surface which is a critical processing parameter in the field of semiconductor manufacturing.

Regarding claims 3 and 9: The platen includes a plurality of processing zones wherein each of the heating elements corresponds to a processing zone, the heating elements are independently controlled to manipulate the surface temperature of the processing zone corresponding to the heating element, see col.6 lines 22-52 of Chiou. The processing surface includes a plurality of processing zones, wherein each of the thermal elements corresponds to a processing zone. The thermal elements of the array are independently controlled according to col. 4 lines 48-50 also in Carpenter.

Regarding claim 4: Heat is the thermal energy applied to the processing zone to raise the surface temperature of the processing zone.

Regarding claims 5 and 11: The thermal energy in the platen from independent sources 52 of Chiou is configured to cool the surface temperature of the processing zone.

Regarding claims 4 and 10: The heater and its cartridges of Carpenter heaters contained within raise the temperature of the processing zone.

Regarding claims 5 and 11: The coolers of Chiou et al or Carpenter are configured to lower the surface temperature of the processing zone.

4. Claims 12, 14, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiou et al in view of Carpenter as applied to claims 1 and 3-11 above, and further in view of Chopra et al (US 2001/0006881).

Regarding claims 12 and 16: The teachings of Chiou et al in view of Carpenter were discussed above.

The apparatus of Chiou et al as modified by Carpenter fails to teach conditioning pucks.

Chopra et al teaches a polishing apparatus for conditioning a web-shaped polishing pad wherein a conditioning device having a plurality of roller segments (array of conditioning pucks) 90,92,94,96,98, and 100, are individually controlled see abstract and [0039].

The motivation to provide the apparatus of Chiou et al in view of Carpenter with the array of pucks of Chopra is to provide a conditioning device that can apply different conditioning treatments to different portions of the polishing surface.

Regarding claim 14: Brushes are taught by Chopra et al in [0039].

Regarding claim 20: Chopra et al teaches a linear belt, see Figs. 1 and 2.

5. Claims 13, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiou et al in view of Carpenter and Chopra et al as applied to claims 12, 14, 16, and 20 above, and further in view of Harada et al (US 6,890,857).

Regarding claims 13 and 17: The teachings of Chiou et al modified by Carpenter and Chopra were discussed above.

This modification fails to teach a plurality of spray nozzles.

Harada et al teaches the treatment of a linear substrate wherein a plurality of nozzles are provided, see Fig. 17. The motivation to provide the apparatus of Chiou et al as modified by Carpenter and Chopra et al with the nozzles of Harada is that they allow the polishing surface to be rinsed in various locations along the length of the linear surface. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed

invention to provide the nozzles of Harada et al to be provided in the apparatus of Chiou et al modified by Carpenter and Chopra.

6. Claims 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiou et al in view of Carpenter and Chopra et al as applied to claims 12, 14, 16, and 20 above, and further in view of Wilson et al (US 6,322,429).

The teachings of Chiou et al modified by Carpenter and Chopra were discussed above. This modification fails to teach the pressure used to condition the polishing surface. Wilson teaches a conditioner assembly 10 in which the conditioning pad 38 applies 1-10 psi pressure in increments of 0.1 psi according to col. 13 lines 19-50. The motivation to provide the apparatus of Chiou et al as modified by Carpenter and Chopra with a pressure within the range of 0.1 to 2.0 psi as claimed in the present invention is that this pressure is the suitable amount of compressive pressure necessary to maintain a clean polishing surface as taught by Wilson et al in col. 13. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to use of the teachings of Wilson to provide an ample amount of compressive pressure in the apparatus of Chiou et al modified by Carpenter and Chopra.

Response to Arguments

7. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. The amendment requiring a connection between the controller and each thermal element caused a modification of the apparatus of Chiou et al to include the teachings of Carpenter.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sylvia R MacArthur
Patent Examiner
Art Unit 1763

January 23, 2006

pl

PARVIZ HASSANZADEH
SUPERVISORY PATENT EXAMINER